

CLAIMS

1. An ion adsorption module comprising a container with an opening into which at least feed water flows and an organic porous ion exchange material having a three-dimensional reticular structure filled into the container, which has a continuous pore structure comprising macropores and mesopores, the macropores being interconnected with each other forming mesopores with an average diameter of 1-1,000 μm in the interconnected parts, has a total pore volume of 1-50 ml/g, contains uniformly distributed ion exchange groups, and has an ion exchange capacity of 0.5 mg equivalent/g or more of the porous material on a dry basis.

2. The module according to claim 1, wherein the container is provided with a feed water inflow pipe connected to the opening into which feed water flows and a treated water outflow pipe.

3. The module according to claim 1 or 2, wherein the organic porous ion exchange material comprises an organic porous cation exchange material and an organic porous anion exchange material, and the module is filled with a stratified bed each of the organic porous cation exchange material and the organic porous anion exchange material.

4. An ion adsorption module comprising a layer of ion

exchange resin particles followed by a downstream layer of an organic porous ion exchange material having a three-dimensional reticular structure, which has a continuous pore structure comprising macropores and mesopores, the macropores being
5 interconnected with each other forming mesopores with an average diameter of 1-1,000 μm in the interconnected parts, has a total pore volume of 1-50 ml/g, contains uniformly distributed ion exchange groups, and has an ion exchange capacity of 0.5 mg equivalent/g or more of the porous material on a dry basis.

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5. The module according to claim 2 or 3, wherein the module is disposed on the downstream side of another ion adsorption module filled with ion exchange resin particles.

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6. A water treatment method comprising removing ionic substances from feed water by adsorption by causing the feed water to come in contact with an organic porous ion exchange material having a three-dimensional reticular structure, which has a continuous pore structure comprising macropores and
20 mesopores, the macropores being interconnected with each other forming mesopores with an average diameter of 1-1,000 μm in the interconnected parts, has a total pore volume of 1-50 ml/g, contains uniformly distributed ion exchange groups, and has an ion exchange capacity of 0.5 mg equivalent/g or more of the
25 porous material on a dry basis.

7. The method according to claim 6, wherein the feed water

has been treated in advance using ion exchange resin particles.